

**5.6.9 Typical Efficacies and Lifetimes of Lamps (1)**

| <u>Current Technology</u> | <u>Efficacy<br/>(lumens/Watt)</u> | <u>Typical Rated<br/>Lifetime (hours)</u> | <u>CRI (2)</u> |
|---------------------------|-----------------------------------|---|----------------|
| Incandescent              | 10 - 19                           | 750 - 2,500                               | 97             |
| Halogen                   | 14 - 20                           | 2,000 - 3,500                             | 99             |
| Fluorescent - T5          | 25 - 55                           | 6,000 - 7,500                             | 52 - 75        |
| Fluorescent - T8          | 35 - 87                           | 7,500 - 20,000                            | 52 - 90        |
| Fluorescent - T12         | 35 - 92                           | 7,500 - 20,000                            | 50 - 92        |
| Compact Fluorescent       | 40 - 70                           | 10,000                                    | 82             |
| Mercury Vapor             | 25 - 50                           | 29,000                                    | 15 - 50        |
| Metal Halide              | 50 - 115                          | 30,000 - 20,000                           | 65 - 70        |
| High-Pressure Sodium      | 50 - 124                          | 29,000                                    | 22             |
| Low-Pressure Sodium       | 18 - 180                          | 18,000                                    | 0              |
| Solid State Lighting      | (3)                               | (4)                                       | 70-80          |

Note(s): 1) Theoretical maximum luminous efficacy of white light is 220 lumens/Watt. 2) CRI = Color Rendition Index, which indicates a lamp's ability to show natural colors. 3) The DOE Solid State Lighting program has set an efficacy goal twice that of fluorescent lights (160 lumen per Watt). 4) Has not been determined.

Source(s): DOE, EERE, Building Technology Program/Navigant Consulting, U.S. Lighting Market Characterization, Volume I: National Lighting Inventory and Energy Consumption Estimate, Sept. 2002, Appendix A, p. 74; DOE/Navigant Consulting, Solid State Lighting Research and Development Portfolio, Mar. 2006, p 55.